

that these tiger beetles are not found at all, from November to March. During the remaining period of the year they are found all over the place and several generations are passed through, and towards the close of this period, around the end of October, the individuals in the pupal stage enter into a stage of dormancy and remain so for about four months. Every year, the first emergence of the adult tiger beetles takes place soon after the first or second shower around March or April. The first emergence in the field was observed in the third week of March in 1966, in the first week of April in 1967 and in the second week of March in 1968. But in all these cases, it was observed that the emergence took place soon after the first rains.

The population of the tiger beetles then gradually increases and reaches the peak during the months of July, August and September. Then their numbers steadily decline and eventually reach zero level around November or December. During the period November to March, the population levels of the prey insect species may therefore show a rise in the absence of active predation by these voracious tiger beetles and their larvae, unless this component of environmental resistance is imposed on them by some other predaceous species.

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20. SWARMING OF BUTTERFLIES AND MOTHS

Swarms of butterflies and moths were attracted to the trees of *Caesalpinia coriaria* Willd. in flower, during September-October, 1969, in and around Coimbatore, Tamil Nadu. The most unusual feature about this phenomenon was, that the insects went straight to the flowers of *C. coriaria* even when these trees were surrounded by other flowering plants like *Lantana*, *Zinnia*, *Chrysanthemum*, *Bougainvillea*, *Petunia*, *Peltophorum*, *Margosa* etc. A few butterflies were flying about *Lantana*, *Zinnia* and *Chrysanthemum*, but thousands were seen resting, feeding or flying about the *C. coriaria* trees. The following species of butterflies and moths resting on the trees were collected and identified:

NYMPHALIDAE

1. *Precis hierta* (Fabricius).
2. *P. lemonias* (Linnaeus).
3. *P. almana* (Linnaeus).

DANAIDAE

4. *Euploea core* (Cramer).
5. *Danaïs chrysippus* (Linnaeus).
6. *D. melanippus* (Cramer).
7. *D. limniace* Cramer.

PAPILIONIDAE

8. *Tros hector* (Linnaeus).
9. *T. aristolochiae* (Fabricius).
10. *Papilio polytes* Linnaeus.
11. *P. demoleus* Linnaeus.
12. *Graphium agamemnon* (Linnaeus).

PIERIDAE

13. *Colotis eucharis* (Fabricius).
14. *Anaphaeis aurota* (Fabricius).
15. *Catopsila pyranthe* (Linnaeus).
16. *C. pomona* (Fabricius).
17. *Eurema hecabe* (Linnaeus).
18. *Hebomoia glaucippe* (Linnaeus).

SPHINGIDAE

19. *Macroglossa vialis* Bull. (*M. affictitia* Bull.).
20. *Cephonodes* sp.

PYRALIDAE

21. *Hymenia recurvalis* C.
22. *Psarah bipunctalis* F.

Apart from the Lepidopteran insects, a few wasps were also noticed on the trees, but no honey bees. No caterpillars of these insects

were found in the surrounding areas. It is possible that the insects are attracted by the sweet strong fragrance of the flowers of *C. coriaria* to feed on the honey produced by them.

Wynter-Blyth (1957) in his book BUTTERFLIES OF THE INDIAN REGION (p. 42) has reported that butterflies are attracted to the trees of *Buddleia* in the Himalayas and *Poinsettia* and *Moringa* at lower elevations. The present report is probably such a phenomenon.

COIMBATORE,
January 20, 1970.

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21. OBSERVATIONS ON THE MATING BEHAVIOUR IN THE ANT *MONOMORIUM GRACILLIMUM* SMITH (HYMENOPTERA: FORMICIDAE)

Monomorium gracillimum Smith is a small dark brownish-red ant, about 2 mm. in length and is a very common household pest, nesting in the ground or floor and in the crevices of walls. On June 16, 1968, at about 5 p.m. when the weather was cloudy and slightly rainy, the authors found large numbers of workers and alate males and females of *Monomorium gracillimum* just outside the opening of the nest in the ground floor of the Malabar Christian College building. Evidently, the colony was going through the process of swarming. Some workers and winged reproductives were collected in a tube and were transferred into an artificial nest in the laboratory, for observation. The ants were fed with honey and dead houseflies. The next morning, the winged males and females were observed mating. Within the artificial nest, the alate forms showed no tendency to fly. The mating behaviour under conditions of captivity which could easily be observed through the transparent top-cover of the nest, is as follows:

An alate male (4 mm.) is much smaller than an alate female (7.5 mm.). The alate male approaches the female from behind and strokes the tip of its gaster with its antennae and front pair of legs. The female starts walking about and is closely followed by the male in tandem fashion. The male then grasps and holds firmly the posterior half of the gaster of the female, with its three pairs of legs. The thoracic part of the male now comes to lie on the dorsal side of the gaster of the female. The gaster of the male is then bent downwards almost at right angles, at the pedicel, to the longi-